

NATURAL RESOURCES CONSERVATION SERVICE CONSERVATION PRACTICE STANDARD

CRITICAL AREA PLANTING

(acre)
CODE 342

DEFINITION

Establishing permanent vegetation on sites that have or are expected to have high erosion rates, and on sites that have physical, chemical or biological conditions that prevent the establishment of vegetation with normal practices.

PURPOSE

- Stabilize areas with existing or expected high rates of soil erosion by wind or water.
- Restore degraded sites that cannot be stabilized through normal methods.

CONDITIONS WHERE PRACTICE APPLIES

On highly erodible or critically eroding areas that cannot be stabilized by ordinary conservation treatment and management and if left untreated can cause severe erosion or sediment damage. Examples of applicable areas are dams, dikes, mine spoil, levees, cuts, fills, surface-mined areas, and denuded or gullied areas where vegetation is difficult to establish by usual planting methods. Establishing and maintaining vegetation on channel banks, berms, spoil and associated areas, follow Conservation Practice Standard, Channel Bank Vegetation 322.

CRITERIA

Plant species and their cultivars shall be selected based on:

- Climate conditions, such as annual rainfall, seasonal rainfall patterns growing season length, temperature extremes, USDA Plant Hardiness Zones or Major Land Resource Areas.
- Soil condition and position attributes such as soil texture, pH, available water holding capacity, slope, aspect, shallow depth, or restrictive pans, inherent fertility, salinity and alkalinity, drainage class, flooding and ponding, and severe levels of toxic elements that may be present such as selenium and aluminum.
- Plant resistance to disease and insects common to the site or location.
- Plant compatibility with other species and their selected cultivar(s) in rate of establishment, maturity, palatability, and growth habit when seeded together as a mix.
- Plant compatibility with irrigation when applied.

Specified seed, methods of planting and date of planting shall be in accordance to Plant Materials Technical Note 24. ***The planting rates will be 150% of the rates listed in Idaho Plant Materials, Technical Note 24.***

All seed and planting materials shall be labeled and meet state seed quality law standards and use of certified seed will be encouraged.

Based on seed tags, adjust seeding rates at the field site to insure the required amount of pure live seed (PLS) is applied to site.

See Idaho NRCS Plant Materials Technical Note 4.

Additional Criteria to Restore Degraded Sites

If gullies or deep rills are present, they will be treated, if feasible, to allow equipment operation and ensure proper site and seedbed preparation.

Soil amendments will be added as necessary to ameliorate or eliminate physical or chemical conditions that inhibit plant establishment and growth. Required amendments, such as compost or manure to add organic matter and improve soil structure and water holding capacity or soil amendments in accordance to soil tests shall be included in the site specification with amounts, timing, and method of application.

CONSIDERATIONS

Critical area planting sites are generally severely eroded or disturbed and have low fertility and few, if any, resident seeds. High seeding and fertilizer rates are needed to insure adequate vegetative cover.

Sites reshaped with heavy equipment may have a smooth hard surface and soil compaction making it difficult to prepare a good seedbed. Disking, ripping or other treatment may be necessary to prepare the site for seeding.

The horizontal indentations left by tracked equipment may provide a suitable planting site on steep slopes.

Straw is the preferred mulch but needs to be anchored in place with equipment such as rollers and crimpers. Tackifiers, woven netting, and other covers can be used to anchor mulch when slopes are too steep to use equipment on the site. Wheat straw deteriorates less rapidly and results in less volunteer growth compared to barley straw. Use clean straw to minimize spread of noxious weeds. Woven, fabric, and artificial mulches can also be used.

Many soils in critical area planting sites are low in most plant nutrients and should be tested for fertilizer recommendations. Consider initial and follow up applications of fertilizer to ensure stand establishment.

When soils are coarse sandy, gravelly or granitic, or when water quality will be adversely affected reduce fertilizer rates.

Consider using hydro planting and mulching on steep, inaccessible sites not suitable for straw mulch planting. Do not use when high winds or animal or foot traffic are expected to interfere. Consider the effective range of straw blowing equipment and hydro seeders when use is planned.

A split hydromulch, hydroplanting operation is recommended on sites suitable to hydromulch planting. Seed and fertilizer should be applied first to provide better seed to soil contact and then the mulch is hydromulched over the site.

When plantings are to be irrigated, use nonerosive methods to maintain adequate moisture in at least the upper six (6) inches of soil during the first four (4) weeks and then in the upper 12 inches until the end of the growing season. Seedlings may be

susceptible to excessive irrigation during establishment.

Consider permanent exclusion of domestic livestock and other disturbances.

Consider effects on the water budget, especially on volumes and rates of runoff, infiltration, evaporation, transpiration, deep percolation, and ground water recharge.

Effects of vegetation management on soil moisture including snow catch and melt.

Consider effects of increased organic matter on water holding capacity of the soil.

Potential for a change in plant growth and transpiration because of changes in soil water volume.

Consider effects on erosion and the movement of sediment and soluble and sediment-attached substances carried by runoff including filtering effect of vegetation on movement of sediment and dissolved and sediment-attached substance.

Consider short-term and construction-related effects on downstream water courses.

Consider potential for earth moving to uncover or redistribute toxic materials and effect on water or vegetation.

Consider effects on the use and management of nutrients and pesticides and resulting effects on surface and ground-water quality.

Consider effects on the visual quality of downstream water resources.

documenting application. *Refer to Plant Materials Technical Note 24 for species information.*

The acceptable time period for obtaining woody cuttings from host plants will be listed in plan.

When woody cuttings will be planted see *Plant Materials Technical Note 23.*

All seedlings will be protected from grazing by domestic animals and other disturbances until stand establishment. Seeded species may be considered established when they are well rooted (not easily pulled out of the ground by hand) and/or are producing reproductive stems. A minimum of one full growing season is recommended.

Water control practices will be installed as needed to control surface runoff and break up existing erosion patterns.

The area will be shaped or graded to eliminate existing surface erosion patterns and improve ease of seeding operations.

Drills will have agitators and other equipment needed to get uniform seeding. Rice hulls and other dilutants will be used when determined necessary by the Conservationist. Drilling will be on the contour or across slope where practical.

Where broadcast seeding the seed will be covered by use of hand rake or by dragging harrows, chains or other suitable equipment over the surface or mulch to cover the seed where practical.

PLANS AND SPECIFICATIONS

Plans and specifications are to be prepared for each treatment area and include planting area preparation; species to be planted; methods and rates of planting; planting depth; time of planting; fertilizer requirements; irrigation requirements; and management or establishment requirements.

Form ID-CPA-025, Seeding Specification will assist you in planning practice and

Nurse crops will not be used.

Generally accepted planting dates for non irrigated land are:

MLRA	Spring (before)	Fall	Dormant (after)
8	4/1	10/1*	11/15
9	5/1	8/12-9/20	11/1
10	5/1	9/1-10/1	11/1
10A	5/15	8/25-9/20	10/20
11	4/15	10/1*	11/1
11A	4/15	10/1*	11/1
11B	4/20	9/20*	10/20
12	5/15	9/20*	11/20
13	5/15	8/25-9/20	10/20
25	5/15	8/25-9/20	10/20
28A	5/1	9/1-10/1	11/1
43	6/1	8/15-9/10	10/10
43A	6/1	8/15-9/10	10/10
47	6/15	8/25-9/20	10/20

Seeding dates may vary from these guidelines based on local experience and conditions.

*Irrigated Only

When considering bio-engineering techniques for protecting critical areas refer to Engineering Field Handbook Chapter 18.

When planting live shrubs and trees refer to Shrub and Tree Establishment standard 612.

When using sod the surface will be smoothed so air pockets will not form beneath the sod.

Sod strips will be fit closely together and tamped tightly in place. Sod will be staked down as needed to protect from movement on steep slopes.

Cut sod will be kept moist. The maximum time period between cutting and laying will not exceed 96 hours.

Areas covered with sod will be adequately irrigated until sod has become well established. Certain species may require

permanent irrigation to maintain adequate cover.

OPERATION AND MAINTENANCE

Maintenance needed for this practice includes:

1. Periodic inspection and evaluation of vegetation to determine maintenance needs.
2. Replanting due to drought, insects or other event which prevented adequate stand establishment should be addressed within 1-3 years of planting. Recommendations may vary from complete re-establishment to overseeding or spot planting.
3. Repair of appurtenances and fences.
4. Use of the area shall be managed as long as necessary to stabilize the site and achieve the intended purpose.